

What Is Claimed Is:

1 1. A color-simulating apparatus comprising:

2 a light source device for providing modulated lights of three
3 primary colors, which are projected on an article and reflected
4 by the article;

5 a demodulation device for receiving the lights reflected by
6 the article and demodulating the lights to output signals
7 representing the intensity of the three primary colored lights;
8 and

9 a light-emitting device for generating a colored light
10 according to the intensity signals output from the demodulation
11 device.

12 2. The color-simulating apparatus as claimed in claim 1, wherein
13 the light source device comprises:

14 a three-primary-colored light source for providing three
15 primary colored lights; and

16 a modulation device for modulating the three primary colored
17 lights.

18 3. The color-simulating apparatus as claimed in claim 1, wherein
19 the demodulation device comprises:

20 an optical sensor for receiving the light reflected by the
21 article and converting optical signals to electrical signals; and

22 a demodulator for demodulating the electrical signals to
23 respectively output intensity signals of the three-primary-
24 colored lights.

25 4. The color-simulating apparatus as claimed in claim 1, wherein

2 the light-emitting device comprises at least one three-
3 primary-colored light source.

1 5. A color-simulating apparatus comprising:

2 a light source device for providing modulated light , which
3 is projected on an article and reflected by the article;

4 a filtering device for separating the light into lights of
5 three primary colors;

6 a demodulation device for receiving the three-primary-colored
7 lights and demodulating the lights to output signals representing
8 the intensity of the three primary colored lights; and

9 a light-emitting device for generating a colored light
10 according to the intensity signals of the three-primary-colored
11 lights output from the demodulation device.

12 6. The color-simulating apparatus as claimed in claim 5, wherein
13 the light source device comprises:

3 a white light source for providing a white light; and

4 a modulation device for modulating the white light.

1 7. The color-simulating apparatus as claimed in claim 5, wherein
2 the filtering device includes filters of three primary colors for
3 filtering out lights of three primary colors from the white light.

1 8. The color-simulating apparatus as claimed in claim 5, wherein
2 the demodulation device comprises:

3 an optical sensor for receiving the three-primary-colored
4 lights and converting optical signals to electrical signals; and

5 a demodulator for respectively demodulating the electrical
6 signals to obtain intensity signals of the three-primary-colored

7 lights.

1 9. The color-simulating apparatus as claimed in claim 5, wherein
2 the light-emitting device comprises at least one three-
3 primary-colored light source.

1 10. The color-simulating apparatus as claimed in claim 5, wherein
2 the light source device comprises:

3 a three-primary-colored light source for providing three-
4 primary-colored lights; and

5 a modulation device for modulating the three-primary-colored
6 lights.

7 11. The color-simulating apparatus as claimed in claim 5, wherein
8 the demodulation device comprises:

9 optical sensors for receiving the three-primary-colored
10 lights and converting optical signals to electrical signals;

1 filters for respectively receiving the electrical signals
2 output from the optical sensors and filtering out noises of the
3 electrical signals; and

4 demodulators for respectively demodulating the filtered
5 electrical signals to obtain intensity signals of the three-
6 primary-colored lights